



Commissioning and Verification

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Design

Commissioning

Operation and Maintenance



Technical details for IECRE PV systems certification



Construction

- Construction monitoring
- Validation of design execution

Commissioning

- IEC 62446 to set minimum
- Additional per contract requirements

Capacity Validation

- Short term performance check
- ASTM E2848
- IEC 61724

Design

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IEC 62446 Edition 1

- Edition 1 released 2009
- One of highest selling PV standards
- Small system context
- Not a performance standard



IEC 62446 Edition 2

- Revisions to Edition 1 approved this summer
- Final editing underway
- Full publication anticipated early 2015.
- **Additions to address different categories of systems.**
- Still not a performance standard



82/816/CDV

COMMITTEE DRAFT FOR VOTE (CDV)
PROJET DE COMITÉ POUR VOTE (CDV)

Project number Numéro de projet		IEC 62446 Ed.2	
IEC/TC or SC: CEI/CE ou SC:		82 Secretariat / Secrétariat USA	
Submitted for parallel voting in GENELEC Soumis au vote parallèle au CENELEC		Date of circulation Date de diffusion 2014-02-21	
Also of interest to the following committees Intéresse également les comités suivants		Closing date for voting (Voting mandatory for P-members) Date de clôture du vote (Vote obligatoire pour les membres (P)) 2014-05-23	
Proposed horizontal standard Norme horizontale suggérée		Supersedes document Remplace le document 82/749/CD, 82/814/CC	
<input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the TC/SC secretary Les autres CE/SC sont requis d'indiquer leur intérêt, si nécessaire, dans ce CDV à l'intention du secrétaire du CE/SC			
Functions concerned Fonctions concernées			
<input type="checkbox"/> Safety Sécurité	<input type="checkbox"/> EMC CEM	<input type="checkbox"/> Environment Environnement	<input checked="" type="checkbox"/> Quality assurance Assurance qualité
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Title : IEC 62446:

Grid connected PV systems - Minimum requirements for system documentation, commissioning tests and inspection

Introductory note

This CDV was prepared following discussions at the WG3 meeting in New Delhi. All comments from the previous meeting in Sydney were addressed in the CC report.

IEC 62446, Grid connected photovoltaic systems – Minimum requirements for system documentation, commissioning tests and inspection

Commissioning

Scope of Standard:

- Defines minimal information and documentation required to be handed over to a customer following the installation of a grid connected PV system
- Minimum commissioning tests and inspection criteria
- Minimum documentation to verify safe installation and correct operation
- *Can also be used for periodic re-testing*
- Grid connected systems only
 - Edition 1: Not including AC modules
 - Edition 2: Including AC modules
- Intended for designers, installers, third parties
- Subsequent use for re-inspection, maintenance, or modifications
- Edition 2: Test regimes differentiated as appropriate for the system
 - Type
 - Scale,
 - Complexity
 - .. and by extension, contract



Technical details for IECRE PV systems certification



IEC 62446 Editions 1 and 2

System Documentation

As-built drawings

Data sheets

Test data

Inspections

Design to standards

Array sizing

Mechanical and electrical components

Grounding, protection

Labeling and identification

Testing

Category 1 tests

Category 2 tests

Other tests

Verification reports

Design

Commissioning

Operation and Maintenance



Technical details for IECRE PV systems certification



IEC 62446 Testing Categories

Category 1 All Systems	Category 2 Expanded Sequence	Additional Tests Optional/Circumstantial
<ul style="list-style-type: none">• AC circuits to IEC 60364-6• Ground continuity• Polarity tests• Combiner box test• String open circuit voltage• String current (SC or operating)• Functional tests• Insulation resistance DC	<ul style="list-style-type: none">• Category 1 tests plus:• String IV curve inspections• IR inspections	<ul style="list-style-type: none">• Voltage to ground (resistive ground systems)• Blocking diode tests• Wet insulation tests• Shade evaluation

Larger systems, systems with stronger contracts

Modified list of tests for systems with module level electronics



Construction Monitoring / Design Execution Verification

Process to validate:

- Appropriate methods
- Portions not visible after construction

